Office of Naval Research International Field Office

Newsletter No. 1001

Intelligent Networks Conference

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October 10, 2001

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Keywords

Intelligent Network (IN), interoperability, Public Switched Telephony Network (PSTN), Third Generation (3G), Customized Applications for Mobile Enhanced Logic (CAMEL), Integrated Services Digital Network (ISDN), Next Generation Networks (NGN)

Summary

Approximately 250 delegates from around the world attended the 7th International Conference on Intelligence in Next Generation Networks. Several European telephone, electronic, and software companies delivered presentations. Universities in Austria, Italy, Norway and Canada also made presentations. The primary focus of the conference this year was an architecture linking the PSTN (Public Switched Telephony Networks) including next generation networks with the existing or evolving internet networks. This architecture will be based on packet technology with the capability to provide both fixed and mobile telephone users with application programming interfaces (API's) and access to internet resources, while maintaining the reliability and availability of the current PSTN.

Introduction

The telecommunication industry is developing a Next Generation Network (NGN) based on a common, packet-based architecture for voice, data and multimedia services. The typical architecture of the NGN presented at this conference included separate, linked networks, all using packet formats. The current PSTN is to remain a closed network (thereby retaining the current reliability) and the open network is to be available for third party software applications. Various software protocols are contending for the industry standard in creating the network open API's

Conference Goals

Intelligent Network
The intelligent network (IN), as envisioned in the Next Generation Network (NGN), will support signaling protocols spanning the various existing communication networks. These protocols will include IN protocols for fixed networks, mobile network protocols and IP network protocols. The goal is to create a communications environment with a powerful, easy-to-use programming capability, an open architecture suitable for service plug-ins (e.g., Java API's), and internet provisioning and protocol compatibility.

Network Open API's
In order to continue robust telephony services, separation of the IN into a series of seamlessly interconnected nets is envisioned. This approach is already in limited use in the current 2G phone systems. The extension of the approach requires enabling software, such as *Parlay, Jain, Corba, Java.*

Parlay is an open API useable by third parties. The protocols allow a third party to have a secure, controlled and accountable access to the network capabilities. The typical architecture is controlled by an Open Service Access (OSA). This module using *Parlay* and Session Initiation Protocol (SIP) allows controlled access to the mobile nets, fixed nets, and the IP net.

Customized Applications for Mobile Enhanced Logic (*CAMEL*)
CAMEL is a suite of protocols providing intelligent networking to mobile users. Among the enhancements available are international roaming for prepaid users, smooth tracking of call states, and a variety of user features, such as re-routing, call duration limits, message forwarding, etc. An in-depth presentation by Marconi described a recent implementation of *CAMEL II* .

Interoperability of the Hybrid Architecture
Several industry working groups are developing standards and protocols for successful linking of the PSTN and IP networks. Among these are the *IETF PINT, SPIRITS* and *SIN* initiatives. The *IETF* (Internet Engineering Task Force) has developed the *PINT* (PSTN Internet Interworking) establishing protocols and safeguards for interface of a public switched telephony network and internet networks. Spirits provides a means of requesting Internet services from a PSTN. SIN is another set of protocols allowing the use of IN-based services in an IP net environment

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Assessment

This conference was highly informative on the state of the art in hybrid communications networks. The rapidly evolving telephone services provide opportunities for greatly increased utility and availability of software and Internet resources. Intelligent networks store “call states” in order to provide tracking of call connections (even when complex packet routing through PSTN, mobile and Internet networks is used). These call states identify origination, destination and duration of telephone services, and other data necessary for billing services. Typically these call states are transitory and are not retained in the network memory once a call is successful. Although the call states do not provide any information on content, such data may be useful in a data mining sense, wherein traffic flow can be statistically viewed.

Contacts

Homepages
The following homepages provide introductions to various elements of the Intelligent Networking community:

ALCATEL telecommunication company provides fixed and mobile voice services, messaging, and Internet and multimedia services. Additional information can be found at http://www.alcatel.com

APPIUM technologies is a developer of telecom application servers and network-independent communications and applications for both fixed and mobile systems. Information is available at: http://www.appium.com

VASA is an independent nonprofit consortium with members from the international community of operators, vendors, application developers, and consultants. Additional information on programs and policies is available on the VASA web site: http://www.vasaforum.org

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